



SDMS DocID 2232301

ORIGINAL



Lord Corporation
2000 West Grandview Blvd.
P. O. Box 10038
Erie, PA 16514-0038
814:868-0924
FAX: 814:864-3452

CERTIFIED MAIL

Mr. David P. Turner, RPM (3HS22)
Western PA Section
United States Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

May 15, 2007

Reference: LORD-Shope RA Monthly Progress Report

Dear Mr. Turner:

LORD is hereby submitting two copies of the monthly progress report for the period of April 1, 2007 through April 30, 2007.

The following work was conducted during this period:

REMEDIAL ACTION

NPDES Report:

The April report will be submitted under a separate cover.

Thermal Oxidizer:

The thermal oxidizer efficiency was 99.9%, with an influent concentration of 154.1 ppm. A copy of the spreadsheet used for the calculation is attached for your review.

The samples were collected and analyzed according to the new procedure (Method 15). The entire laboratory report is included as requested in Vic Janosik's letter of June 26, 2005.

Groundwater Treatment:

The groundwater treatment system was operating normally during this interim.

The groundwater TOC effluent concentration was 1.2 mg/l.

Sincerely,

LORD Corporation

George M. Kickel

Director, Environment, Safety, Health, and Regulatory Compliance

Attachments

GMK07012/cmf

cc: (b) (4) - ARCADIS G & M, Inc.
John Morettini, PADEP (Certified Mail)



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Shope ISVS Method 15

ORIGINAL

	Jan-07		Feb-07		Mar-07		Apr-07		May-07		Jun-07		Jul-07	
	Influent ppb(v)	Effluent ppb(v)												
tert-Butyl Alcohol	N.D.	81	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	18					
Propene	5,500	8.7	N.D.	N.D.	N.D.	N.D.	1,900	4.6						
Dichlorodifluoromethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.3	N.D.	0						
Chlorodifluoromethane	490	1	N.D.	6.0	N.D.	N.D.	N.D.	N.D.						
Freon 114	N.D.													
Chloromethane	N.D.	2	N.D.	11.0	N.D.	4.3	N.D.	4.2						
Vinyl Chloride	780	N.D.	630	N.D.	1,100	N.D.	490	0						
1,3-Butadiene	N.D.													
Bromomethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.6	N.D.	1						
Chloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.4	N.D.	1.1						
Dichlorofluoromethane	N.D.													
Trichlorofluoromethane	N.D.													
Pentane	620	4	150	16.0	1,600	2.4	2,000	1.1						
Acrolein	N.D.	7	N.D.	N.D.	N.D.	N.D.	N.D.	7.1						
1,1-Dichloroethene	N.D.	N.D.	140	N.D.	160	N.D.	N.D.	1						
Freon 113	N.D.													
Acetone	4,400	270	990	350.0	4,300	130.0	5,100	150						
Methyl Iodide	N.D.													
Carbon Disulfide	2,000	6.7	480	41.0	1,200	N.D.	2,200	N.D.						
Acetonitrile	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10,000	19						
3-Chloropropene	N.D.													
Methylene Chloride	1,600	5.3	510	45.0	1,200	0.6	1,300	4.2						
Acrylonitrile	N.D.													
trans-1,2-Dichloroethene	N.D.	N.D.	250	N.D.	230	N.D.	N.D.	N.D.						
Methyl t-Butyl Ether	N.D.													
Hexane	550	3	460	12.0	660	1.1	710	1.5						
1,1-Dichloroethane	300	N.D.	340	N.D.	330	N.D.	230	N.D.						
Vinyl Acetate	N.D.													
cis-1,2-Dichloroethene	34,000	82	30,000	20.0	24,000	4.6	22,000	2.2						
2-Butanone	N.D.	49	N.D.	18.0	N.D.	22.0	N.D.	19						
Ethyl Acetate	N.D.													
Methyl Acrylate	N.D.													
Chloroform	1,700	4	1,700	N.D.	1,800	0.6	970	1.6						
1,1,1-Trichloroethane	870	2	910	N.D.	940	N.D.	600	0						
Carbon Tetrachloride	N.D.	5.7												
1,2-Dichloroethane	N.D.													
Benzene	300	1	290	N.D.	350	2.3	300	2.1						
Isooctane	N.D.													
Heptane	N.D.	N.D.	54	N.D.	N.D.	0.7	N.D.	1						
Trichloroethene	140,000	350	150,000	110.0	120,000	23.0	96,000	9.3						
Ethyl Acrylate	N.D.													
1,2-Dichloropropane	320	N.D.	340	N.D.	300	N.D.	300	N.D.						
Methyl Methacrylate	N.D.													
Dibromomethane	N.D.													
1,4-Dioxane	N.D.													
Bromodichloromethane	N.D.													
cis-1,3-Dichloropropene	N.D.													
4-Methyl-2-Pentanone	N.D.													
Toluene	1,500	9.3	370	19.0	680	0.7	500	N.D.						
Octane	N.D.	N.D.	68	N.D.	N.D.	0.3	N.D.	0						
trans-1,3-Dichloropropene	N.D.													
Ethyl Methacrylate	N.D.													
1,1,2-Trichloroethane	N.D.	N.D.	64	N.D.	N.D.	N.D.	N.D.	N.D.						
Tetrachloroethene	12,000	27	12,000	12.0	12,000	3.2	7,700	1.2						
2-Hexanone	N.D.	N.D.	N.D.	N.D.	N.D.	1.9	N.D.	N.D.						
Dibromochloromethane	N.D.													
1,2-Dibromoethane	N.D.													
Chlorobenzene	330	N.D.	320	N.D.	340	N.D.	N.D.	N.D.						
1,1,1,2-Tetrachloroethane	N.D.													
Ethylbenzene	N.D.	N.D.	110	5.0	110	N.D.	N.D.	N.D.						
m/p-Xylene	890	3	1,300	23.0	1,300	0.7	800	0						
o-Xylene	1,200	3	1,700	9.2	1,600	0.5	1,300	0						
Styrene	N.D.													
Bromoform	N.D.													
Cumene	N.D.	N.D.	42	N.D.	N.D.	N.D.	N.D.	N.D.						
1,1,2,2-Tetrachloroethane	N.D.													
1,2,3-Trichloropropane	N.D.													
Bromobenzene	N.D.													
4-Ethyltoluene	N.D.													
1,3,5-Trimethylbenzene	N.D.													
Alpha Methyl Styrene	N.D.	N.D.	N.D.	N.D.	300	N.D.	N.D.	N.D.						
1,2,4-Trimethylbenzene	N.D.													
1,3-Dichlorobenzene	N.D.													
1,4-Dichlorobenzene	N.D.													
1,2-Dichlorobenzene	N.D.													
Hexachloroethane	N.D.													
1,2,4-Trichlorobenzene	N.D.													
Hexachlorobutadiene	N.D.													
Total	209,350	888	202,248	697	174,500	182	154,100	210						
% Efficiency		99.6%		99.7%		99.9%		99.9%						

Notes:
 1 TIC's are not included.
 2 For calculation purposes, <= non-detect (N.D.)



INTERNAL MEMO

DATE: May 9, 2007
TO: George M. Kickel
FROM: Robert D. Adams
Re: Shope April, 2007 ISVS Results

I've attached the final report for the Shope In-Situ Vapor Stripping (ISVS) sampling and analysis, which occurred on April 5, 2007 at the Shope Superfund Site. The Volatile Organic TO-15 results are from Lancaster Laboratories and the field and Methane data are from our Environmental Analytical Laboratory.

Please don't hesitate to call if you have any questions.

cc: Robert Nipper
ANLT070184 file

LORD[®]
**Environmental
Analytical Laboratory**

ANALYTICAL REPORT

SHOPE ISVS
April 2007

PROJECT No. ANLT070184

Lord Corporation Environmental Analytical Laboratory

George M. Kickel
Shope Site Project Manager

(b) (4)
Environmental Laboratory Supervisor

LORD[®]
**Environmental
Analytical Laboratory**

May 9, 2007

CASE NARRATIVE

The following VOC whole air samples were collected at the Shope site:

Air samples collected at Shope on April 5, 2007

Sample I.D.	Sampling Point	Sample Description
SH9-1-LH-14	LH	Landfill Header
SH9-1-TOBI-15	T.O. INFLUENT	Thermal Oxidizer Influent
SH9-1-TOE-16	T.O. EXHAUST	Thermal Oxidizer Effluent

Based on an USEPA request the volatile organic air samples were collected in Summa Canisters and sent to a TO-15 certified Lab. The Lancaster Laboratory results are included in the attached PDF file report.

The Methane results were analyzed by GC/FID by our laboratory.

The Lancaster Lab VOC data in ppb units can be found in the following Excel spreadsheet:



1032595.xls

The following Methane whole air samples were collected at the Shope site in Tedlar bags:

Air samples collected at Shope on April 5, 2007

Sample I.D.	Sampling Point	Sample Description
SH9-1-LH-14	LH	Landfill Header
SH9-1-TOBI-15	T.O. INFLUENT	Thermal Oxidizer Influent
SH9-1-TOE-16	T.O. EXHAUST	Thermal Oxidizer Effluent

ISVS system monitoring measurements

April 5, 2007

9:30

Overall ISVS System Parameters

Landfill Flow	200	SCFM
Extracted Vapor Temperature	52	deg. F
Extracted Vapor Vacuum	51	in. H ₂ O

Sampling location Parameters

Monitoring Location	Pressure (in. H ₂ O)	Flow (in. H ₂ O)	Temperature (° C)
LH	---	1.1	---

Methane results for samples collected April 5, 2007

Sample	Result	Reporting Limit	Units
LH	192	7	ppm (v/v)
Thermal Oxidizer Influent	133	7	ppm (v/v)
Thermal Oxidizer Exhaust	ND	7	ppm (v/v)

ANALYTICAL RESULTS

Prepared for:

Lord Corporation
2000 W. Grandview Blvd.
P.O. Box 10040
Erie PA 16509
814-868-0924

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1032595. Samples arrived at the laboratory on Friday, Apr 6 2007.
The project for this group is Shope ISVS.
The PO# for this sample group is 103080.

<u>Sample No.</u>	<u>Collected</u>	<u>Client Description</u>
5023132	4/5/2007 9:45	SH9-1LH-14 SUMMA Canister #0155 Vapor Sample Shope ISVS
5023133	4/5/2007 9:50	SH9-1TOBI-15 SUMMA Canister #0859 Vapor Sample Shope ISVS
5023134	4/5/2007 9:55	SH9-1TOE-16 SUMMA Canister #0837 Vapor Sample Shope ISVS

METHODOLOGY

The specified methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicle.

1 COPY TO
1 COPY TO

Lord Corporation
Data Package Group

Attn: Robert Adams

Questions? Contact your Client Services Representative
Richard C Entz at (717)656-2300

Respectfully Submitted,

Lord Corporation
Project: Shope ISVS
SDG: LRA25

Report Date: 4/18/2007 15:30
Submit Date: 4/6/2007 9:10

Analysis Name	Units	5023132 SH9-1LH-		5023133 SH9-1TOB		5023134 SH9-1TOE	
		Result	MDL	Result	MDL	Result	MDL
tert-Butyl Alcohol	ppb(v)	N.D.	200.	N.D.	200.	18.	0.20
Propene	ppb(v)	1,600.	200.	1,900.	200.	4.6	0.20
Dichlorodifluoromethane	ppb(v)	N.D.	200.	N.D.	200.	0.38 J	0.20
Chlorodifluoromethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Freon 114	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Chloromethane	ppb(v)	N.D.	200.	N.D.	200.	4.2	0.20
Vinyl Chloride	ppb(v)	N.D.	200.	490. J	200.	0.30 J	0.20
1,3-Butadiene	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Bromomethane	ppb(v)	N.D.	200.	N.D.	200.	0.98 J	0.20
Chloroethane	ppb(v)	N.D.	200.	N.D.	200.	1.1	0.20
Dichlorofluoromethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Trichlorofluoromethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Pentane	ppb(v)	2,000.	200.	2,000.	200.	1.1	0.20
Acrolein	ppb(v)	N.D.	500.	N.D.	500.	7.1	0.50
1,1-Dichloroethene	ppb(v)	N.D.	200.	N.D.	200.	0.61 J	0.20
Freon 113	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Acetone	ppb(v)	4,500.	500.	5,100.	500.	150.	5.0
Methyl Iodide	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Carbon Disulfide	ppb(v)	2,100.	200.	2,200.	200.	N.D.	0.20
Acetonitrile	ppb(v)	10,000.	500.	10,000.	500.	19.	0.50
3-Chloropropene	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Methylene Chloride	ppb(v)	1,200.	200.	1,300.	200.	4.2	0.20
Acrylonitrile	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
trans-1,2-Dichloroethene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Methyl t-Butyl Ether	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Hexane	ppb(v)	640. J	200.	710. J	200.	1.5	0.20
1,1-Dichloroethane	ppb(v)	N.D.	200.	230. J	200.	N.D.	0.20
Vinyl Acetate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
cis-1,2-Dichloroethene	ppb(v)	10,000.	200.	22,000.	200.	2.2	0.20
2-Butanone	ppb(v)	N.D.	500.	N.D.	500.	19.	0.50
Ethyl Acetate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Methyl Acrylate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Chloroform	ppb(v)	450. J	200.	970. J	200.	1.6	0.20
1,1,1-Trichloroethane	ppb(v)	310. J	200.	600. J	200.	0.40 J	0.20
Carbon Tetrachloride	ppb(v)	N.D.	200.	N.D.	200.	5.7	0.20
1,2-Dichloroethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Benzene	ppb(v)	N.D.	200.	300. J	200.	2.1	0.20
Isooctane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Heptane	ppb(v)	N.D.	200.	N.D.	200.	0.69 J	0.20
Trichloroethene	ppb(v)	44,000.	2,000.	96,000.	2,000.	9.3	0.20
Ethyl Acrylate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2-Dichloropropane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20

Lord Corporation
Project: Shope ISVS
SDG: LRA25

Report Date: 4/18/2007 15:30
Submit Date: 4/6/2007 9:10

Methyl Methacrylate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Dibromomethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,4-Dioxane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Bromodichloromethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
cis-1,3-Dichloropropene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
4-Methyl-2-Pentanone	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Toluene	ppb(v)	430. J	200.	500. J	200.	N.D.	0.20
Octane	ppb(v)	N.D.	200.	N.D.	200.	0.46 J	0.20
trans-1,3-Dichloropropene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Ethyl Methacrylate	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,1,2-Trichloroethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Tetrachloroethene	ppb(v)	3,400.	200.	7,700.	200.	1.2	0.20
2-Hexanone	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Dibromochloromethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2-Dibromoethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Chlorobenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,1,1,2-Tetrachloroethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Ethylbenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
m/p-Xylene	ppb(v)	460. J	200.	800. J	200.	0.31 J	0.20
o-Xylene	ppb(v)	570. J	200.	1,300.	200.	0.26 J	0.20
Styrene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Bromoform	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Cumene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,1,2,2-Tetrachloroethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2,3-Trichloropropane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Bromobenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
4-Ethyltoluene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,3,5-Trimethylbenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Alpha Methyl Styrene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2,4-Trimethylbenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,3-Dichlorobenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,4-Dichlorobenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2-Dichlorobenzene	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
Hexachloroethane	ppb(v)	N.D.	200.	N.D.	200.	N.D.	0.20
1,2,4-Trichlorobenzene	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50
Hexachlorobutadiene	ppb(v)	N.D.	500.	N.D.	500.	N.D.	0.50

CAT No.	Analysis Name	Method	Trial ID	Analysis Date/Time	Analyst	Dilution
5023132 SH9-1LH-14 SUMMA Canister #0155						
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0332	Fanella S Zamcho	10000
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0419	Fanella S Zamcho	1000
5023133 SH9-1TOBI-15 SUMMA Canister #0859						
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0505	Fanella S Zamcho	10000
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0551	Fanella S Zamcho	1000
5023134 SH9-1TOE-16 SUMMA Canister #0837						
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0637	Fanella S Zamcho	10
05298	TO 15 VOA Ext. List	EPA TO-15	1	4/13/07 0723	Fanella S Zamcho	1

Client Name: Lord Corporation

Group Number: 1032595

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	Max RPD
Batch number: E0710230A		Sample number(s): 5023132-5023134						
tert-Butyl Alcohol	N.D.	0.20	ppb(v)					
Propene	N.D.	0.20	ppb(v)					
Dichlorodifluoromethane	N.D.	0.20	ppb(v)	114	110	58-125	3	20
Chlorodifluoromethane	N.D.	0.20	ppb(v)					
Freon 114	N.D.	0.20	ppb(v)	107	109	60-128	2	20
Chloromethane	N.D.	0.20	ppb(v)	100	101	54-125	0	20
Vinyl Chloride	N.D.	0.20	ppb(v)	93	93	48-133	1	20
1,3-Butadiene	N.D.	0.50	ppb(v)					
Bromomethane	N.D.	0.20	ppb(v)	62	58	41-128	6	20
Chloroethane	N.D.	0.20	ppb(v)	88	87	59-126	1	20
Dichlorofluoromethane	N.D.	0.20	ppb(v)					
Trichlorofluoromethane	N.D.	0.20	ppb(v)	113	112	60-126	2	20
Pentane	N.D.	0.20	ppb(v)					
Acrolein	N.D.	0.50	ppb(v)					
1,1-Dichloroethene	N.D.	0.20	ppb(v)	92	92	56-127	0	20
Freon 113	N.D.	0.50	ppb(v)	104	101	61-135	2	20
Acetone	N.D.	0.50	ppb(v)					
Methyl Iodide	N.D.	0.20	ppb(v)					
Carbon Disulfide	N.D.	0.20	ppb(v)					
Acetonitrile	N.D.	0.50	ppb(v)					
3-Chloropropene	N.D.	0.50	ppb(v)					
Methylene Chloride	N.D.	0.20	ppb(v)	86	89	53-133	4	20
Acrylonitrile	N.D.	0.50	ppb(v)					
trans-1,2-Dichloroethene	N.D.	0.20	ppb(v)					
Methyl t-Butyl Ether	N.D.	0.20	ppb(v)					
Hexane	N.D.	0.20	ppb(v)					
1,1-Dichloroethane	N.D.	0.20	ppb(v)	86	86	56-128	0	20
Vinyl Acetate	N.D.	0.20	ppb(v)					
cis-1,2-Dichloroethene	N.D.	0.20	ppb(v)	78	80	52-125	2	20
2-Butanone	N.D.	0.50	ppb(v)					
Ethyl Acetate	N.D.	0.20	ppb(v)					
Methyl Acrylate	N.D.	0.20	ppb(v)					
Chloroform	N.D.	0.20	ppb(v)	101	102	62-133	1	20
1,1,1-Trichloroethane	N.D.	0.20	ppb(v)	113	110	61-134	3	20
Carbon Tetrachloride	N.D.	0.20	ppb(v)	103	98	53-123	5	20
1,2-Dichloroethane	N.D.	0.20	ppb(v)	115	114	68-156	1	20

* - Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.

Benzene	N.D.	0.20	ppb(v)	86	88	54-135	3	20
Isooctane	N.D.	0.20	ppb(v)					
Heptane	N.D.	0.20	ppb(v)					
Trichloroethene	N.D.	0.20	ppb(v)	109	108	57-138	0	20
Ethyl Acrylate	N.D.	0.20	ppb(v)					
1,2-Dichloropropane	N.D.	0.20	ppb(v)	87	93	55-143	7	20
Methyl Methacrylate	N.D.	0.20	ppb(v)					
Dibromomethane	N.D.	0.20	ppb(v)					
1,4-Dioxane	N.D.	0.20	ppb(v)					
Bromodichloromethane	N.D.	0.20	ppb(v)					
cis-1,3-Dichloropropene	N.D.	0.20	ppb(v)	89	90	48-132	1	20
4-Methyl-2-Pentanone	N.D.	0.50	ppb(v)					
Toluene	N.D.	0.20	ppb(v)	95	97	58-147	2	20
Octane	N.D.	0.20	ppb(v)					
trans-1,3-Dichloropropene	N.D.	0.20	ppb(v)	102	102	57-151	0	20
Ethyl Methacrylate	N.D.	0.20	ppb(v)					
1,1,2-Trichloroethane	N.D.	0.20	ppb(v)	86	88	54-132	2	20
Tetrachloroethene	N.D.	0.20	ppb(v)	79	80	51-133	0	20
2-Hexanone	N.D.	0.50	ppb(v)					
Dibromochloromethane	N.D.	0.20	ppb(v)					
1,2-Dibromoethane	N.D.	0.20	ppb(v)	100	100	53-158	0	20
Chlorobenzene	N.D.	0.20	ppb(v)	95	95	64-134	0	20
1,1,1,2-Tetrachloroethane	N.D.	0.20	ppb(v)					
Ethylbenzene	N.D.	0.20	ppb(v)	102	100	63-140	1	20
m/p-Xylene	N.D.	0.20	ppb(v)	98	100	64-145	2	20
o-Xylene	N.D.	0.20	ppb(v)	104	103	62-160	1	20
Styrene	N.D.	0.20	ppb(v)	106	103	61-169	3	20
Bromoform	N.D.	0.20	ppb(v)					
Cumene	N.D.	0.20	ppb(v)					
1,1,2,2-Tetrachloroethane	N.D.	0.20	ppb(v)	100	97	35-192	4	20
1,2,3-Trichloropropane	N.D.	0.20	ppb(v)					
Bromobenzene	N.D.	0.20	ppb(v)					
4-Ethyltoluene	N.D.	0.20	ppb(v)					
1,3,5-Trimethylbenzene	N.D.	0.20	ppb(v)	106	108	56-156	2	20
Alpha Methyl Styrene	N.D.	0.20	ppb(v)					
1,2,4-Trimethylbenzene	N.D.	0.20	ppb(v)	108	108	58-168	0	20
1,3-Dichlorobenzene	N.D.	0.20	ppb(v)	113	112	60-157	2	20
1,4-Dichlorobenzene	N.D.	0.20	ppb(v)	107	106	60-161	2	20
1,2-Dichlorobenzene	N.D.	0.20	ppb(v)	113	113	50-177	1	20
Hexachloroethane	N.D.	0.20	ppb(v)					
1,2,4-Trichlorobenzene	N.D.	0.50	ppb(v)	136	141	42-247	3	20
Hexachlorobutadiene	N.D.	0.50	ppb(v)	121	125	32-227	3	20

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

MS MSD MS/MSD RPD BKG DUP DUP DUP RPD

* - Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
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* - Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

QC Comment

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

5023132 SH9-1LH-14 SUMMA Canister #0155

Commonwealth of Pennsylvania Lab Certification No. 36-037

5023133 SH9-1TOBI-15 SUMMA Canister #0859

Commonwealth of Pennsylvania Lab Certification No. 36-037

5023134 SH9-1TOE-16 SUMMA Canister #0837

Commonwealth of Pennsylvania Lab Certification No. 36-037

Analysis Name	Units	Method	Cas Number 5023132		5023133	
			SH9-1LH-14 Result	MDL	SH9-1TOBI-1 Result	
tert-Butyl Alcohol	ppb(v)	EPA TO-15	75-65-0	N.D.	200.	N.D.
Propene	ppb(v)	EPA TO-15	115-07-1	1,600.	200.	1,900.
Dichlorodifluoromethane	ppb(v)	EPA TO-15	75-71-8	N.D.	200.	N.D.
Chlorodifluoromethane	ppb(v)	EPA TO-15	75-45-6	N.D.	200.	N.D.
Freon 114	ppb(v)	EPA TO-15	76-14-2	N.D.	200.	N.D.
Chloromethane	ppb(v)	EPA TO-15	74-87-3	N.D.	200.	N.D.
Vinyl Chloride	ppb(v)	EPA TO-15	75-01-4	N.D.	200.	490. J
1,3-Butadiene	ppb(v)	EPA TO-15	106-99-0	N.D.	500.	N.D.
Bromomethane	ppb(v)	EPA TO-15	74-83-9	N.D.	200.	N.D.
Chloroethane	ppb(v)	EPA TO-15	75-00-3	N.D.	200.	N.D.
Dichlorofluoromethane	ppb(v)	EPA TO-15	75-43-4	N.D.	200.	N.D.
Trichlorofluoromethane	ppb(v)	EPA TO-15	75-69-4	N.D.	200.	N.D.
Pentane	ppb(v)	EPA TO-15	109-66-0	2,000.	200.	2,000.
Acrolein	ppb(v)	EPA TO-15	107-02-8	N.D.	500.	N.D.
1,1-Dichloroethene	ppb(v)	EPA TO-15	75-35-4	N.D.	200.	N.D.
Freon 113	ppb(v)	EPA TO-15	76-13-1	N.D.	500.	N.D.
Acetone	ppb(v)	EPA TO-15	67-64-1	4,500.	500.	5,100.
Methyl Iodide	ppb(v)	EPA TO-15	74-88-4	N.D.	200.	N.D.
Carbon Disulfide	ppb(v)	EPA TO-15	75-15-0	2,100.	200.	2,200.
Acetonitrile	ppb(v)	EPA TO-15	75-05-8	10,000.	500.	10,000.
3-Chloropropene	ppb(v)	EPA TO-15	107-05-1	N.D.	500.	N.D.
Methylene Chloride	ppb(v)	EPA TO-15	75-09-2	1,200.	200.	1,300.
Acrylonitrile	ppb(v)	EPA TO-15	107-13-1	N.D.	500.	N.D.
trans-1,2-Dichloroethene	ppb(v)	EPA TO-15	156-60-5	N.D.	200.	N.D.
Methyl t-Butyl Ether	ppb(v)	EPA TO-15	1634-04-4	N.D.	200.	N.D.
Hexane	ppb(v)	EPA TO-15	110-54-3	640. J	200.	710. J
1,1-Dichloroethane	ppb(v)	EPA TO-15	75-34-3	N.D.	200.	230. J
Vinyl Acetate	ppb(v)	EPA TO-15	108-05-4	N.D.	200.	N.D.
cis-1,2-Dichloroethene	ppb(v)	EPA TO-15	156-59-2	10,000.	200.	22,000.
2-Butanone	ppb(v)	EPA TO-15	78-93-3	N.D.	500.	N.D.
Ethyl Acetate	ppb(v)	EPA TO-15	141-78-6	N.D.	200.	N.D.
Methyl Acrylate	ppb(v)	EPA TO-15	96-33-3	N.D.	200.	N.D.
Chloroform	ppb(v)	EPA TO-15	67-66-3	450. J	200.	970. J
1,1,1-Trichloroethane	ppb(v)	EPA TO-15	71-55-6	310. J	200.	600. J
Carbon Tetrachloride	ppb(v)	EPA TO-15	56-23-5	N.D.	200.	N.D.
1,2-Dichloroethane	ppb(v)	EPA TO-15	107-06-2	N.D.	200.	N.D.
Benzene	ppb(v)	EPA TO-15	71-43-2	N.D.	200.	300. J
Isooctane	ppb(v)	EPA TO-15	540-84-1	N.D.	200.	N.D.
Heptane	ppb(v)	EPA TO-15	142-82-5	N.D.	200.	N.D.
Trichloroethene	ppb(v)	EPA TO-15	79-01-6	44,000.	2,000.	96,000.
Ethyl Acrylate	ppb(v)	EPA TO-15	140-88-5	N.D.	200.	N.D.
1,2-Dichloropropane	ppb(v)	EPA TO-15	78-87-5	N.D.	200.	N.D.
Methyl Methacrylate	ppb(v)	EPA TO-15	80-62-6	N.D.	200.	N.D.
Dibromomethane	ppb(v)	EPA TO-15	74-95-3	N.D.	200.	N.D.
1,4-Dioxane	ppb(v)	EPA TO-15	123-91-1	N.D.	200.	N.D.
Bromodichloromethane	ppb(v)	EPA TO-15	75-27-4	N.D.	200.	N.D.
cis-1,3-Dichloropropene	ppb(v)	EPA TO-15	10061-01-5	N.D.	200.	N.D.
4-Methyl-2-Pentanone	ppb(v)	EPA TO-15	108-10-1	N.D.	500.	N.D.

Toluene	ppb(v)	EPA TO-15	108-88-3	430. J	200.	500. J
Octane	ppb(v)	EPA TO-15	111-65-9	N.D.	200.	N.D.
trans-1,3-Dichloropropene	ppb(v)	EPA TO-15	10061-02-6	N.D.	200.	N.D.
Ethyl Methacrylate	ppb(v)	EPA TO-15	97-63-2	N.D.	200.	N.D.
1,1,2-Trichloroethane	ppb(v)	EPA TO-15	79-00-5	N.D.	200.	N.D.
Tetrachloroethene	ppb(v)	EPA TO-15	127-18-4	3,400.	200.	7,700.
2-Hexanone	ppb(v)	EPA TO-15	591-78-6	N.D.	500.	N.D.
Dibromochloromethane	ppb(v)	EPA TO-15	124-48-1	N.D.	200.	N.D.
1,2-Dibromoethane	ppb(v)	EPA TO-15	106-93-4	N.D.	200.	N.D.
Chlorobenzene	ppb(v)	EPA TO-15	108-90-7	N.D.	200.	N.D.
1,1,1,2-Tetrachloroethane	ppb(v)	EPA TO-15	630-20-6	N.D.	200.	N.D.
Ethylbenzene	ppb(v)	EPA TO-15	100-41-4	N.D.	200.	N.D.
m/p-Xylene	ppb(v)	EPA TO-15	1330-20-7	460. J	200.	800. J
o-Xylene	ppb(v)	EPA TO-15	95-47-6	570. J	200.	1,300.
Styrene	ppb(v)	EPA TO-15	100-42-5	N.D.	200.	N.D.
Bromoform	ppb(v)	EPA TO-15	75-25-2	N.D.	200.	N.D.
Cumene	ppb(v)	EPA TO-15	98-82-8	N.D.	200.	N.D.
1,1,2,2-Tetrachloroethane	ppb(v)	EPA TO-15	79-34-5	N.D.	200.	N.D.
1,2,3-Trichloropropane	ppb(v)	EPA TO-15	96-18-4	N.D.	200.	N.D.
Bromobenzene	ppb(v)	EPA TO-15	108-86-1	N.D.	200.	N.D.
4-Ethyltoluene	ppb(v)	EPA TO-15	622-96-8	N.D.	200.	N.D.
1,3,5-Trimethylbenzene	ppb(v)	EPA TO-15	108-67-8	N.D.	200.	N.D.
Alpha Methyl Styrene	ppb(v)	EPA TO-15	98-83-9	N.D.	200.	N.D.
1,2,4-Trimethylbenzene	ppb(v)	EPA TO-15	95-63-6	N.D.	200.	N.D.
1,3-Dichlorobenzene	ppb(v)	EPA TO-15	541-73-1	N.D.	200.	N.D.
1,4-Dichlorobenzene	ppb(v)	EPA TO-15	106-46-7	N.D.	200.	N.D.
1,2-Dichlorobenzene	ppb(v)	EPA TO-15	95-50-1	N.D.	200.	N.D.
Hexachloroethane	ppb(v)	EPA TO-15	67-72-1	N.D.	200.	N.D.
1,2,4-Trichlorobenzene	ppb(v)	EPA TO-15	120-82-1	N.D.	500.	N.D.
Hexachlorobutadiene	ppb(v)	EPA TO-15	87-68-3	N.D.	500.	N.D.

15	5023134		
MDL	SH9-1TOE-16	Result	MDL
200.		18.	0.20
200.		4.6	0.20
200.		0.38 J	0.20
200.		N.D.	0.20
200.		N.D.	0.20
200.		4.2	0.20
200.		0.30 J	0.20
500.		N.D.	0.50
200.		0.98 J	0.20
200.		1.1	0.20
200.		N.D.	0.20
200.		N.D.	0.20
200.		1.1	0.20
500.		7.1	0.50
200.		0.61 J	0.20
500.		N.D.	0.50
500.		150.	5.0
200.		N.D.	0.20
200.		N.D.	0.20
500.		19.	0.50
500.		N.D.	0.50
200.		4.2	0.20
500.		N.D.	0.50
200.		N.D.	0.20
200.		N.D.	0.20
200.		1.5	0.20
200.		N.D.	0.20
200.		N.D.	0.20
200.		2.2	0.20
500.		19.	0.50
200.		N.D.	0.20
200.		N.D.	0.20
200.		1.6	0.20
200.		0.40 J	0.20
200.		5.7	0.20
200.		N.D.	0.20
200.		2.1	0.20
200.		N.D.	0.20
200.		0.69 J	0.20
2,000.		9.3	0.20
200.		N.D.	0.20
500.		N.D.	0.50

200.	N.D.	0.20
200.	0.46 J	0.20
200.	N.D.	0.20
200.	N.D.	0.20
200.	N.D.	0.20
200.	1.2	0.20
500.	N.D.	0.50
200.	N.D.	0.20
200.	0.31 J	0.20
200.	0.26 J	0.20
200.	N.D.	0.20
500.	N.D.	0.50
500.	N.D.	0.50